

Remarks:

Claims 1, 3, 5-8, 10, 12-14, 16-19, 23, 43, 45, 47, 49, and 51 remain for consideration in this application. Claims 2, 4, 9, 11, 15, 20-22, 24-42, 44, 46, 48, and 50 are canceled.

In the office action dated May 10, 2006, the Examiner objected to claims 1, 8 and 20 as containing informalities. Claims 1 and 8 have been amended consistent with the Examiner's suggestions and claim 20 has been canceled thereby rendering this rejection moot.

Claims 1, 3, and 5-7 were rejected under 35 U.S.C. 102(e) as being anticipated by Blankenship et al. Blankenship et al. is directed toward a hydrogenation catalyst including a high surface area support loaded with gold. Applicants have amended the second Markush group recited in claim 1 to delete gold therefrom. Therefore, there no longer exists any overlap between the teachings of Blankenship et al. and the presently claimed invention. Blankenship et al. do not teach impregnation of a first material with Ag, Hg, Sn, Ga, In, cations thereof and oxides thereof. Applicants request that this rejection be withdrawn.

Claims 8-10, 16, 43-44, 46-48, and 50-51 were rejected under 35 U.S.C. 102(b) as being anticipated by Elliott et al. Applicants have amended independent claim 8 to recite that the first material is selected from a specific Markush group of metal oxides. The Markush group of second materials has also been amended to delete platinum. Elliott et al. teach the use of a porous titania or zirconia support having nickel dispersed therein an optionally an added metal selected from the group of copper, silver, rhenium, tin, ruthenium, and combinations thereof. The present first material Markush group excludes zirconia and titania from the group of metal oxides. Therefore, Elliott et al. do not anticipate the claimed composites.

Claims 43 and 47 have also been amended to recite the same first material Markush group as claim 8. Therefore, for all the reasons given above with respect to claim 8, Applicants submit that claims 43, 47, and all claims depending therefrom are allowable over Elliott et al.

Furthermore, with respect to claims 8 and 47 which are directed toward composites comprising a plurality of agglomerated nanocrystalline particles, it is noteworthy that Elliott et al. teach that it is an object of their invention to provide a catalyst that resists agglomeration. See, column 2, lines 63-65. Therefore, Elliott et al. clearly teach away from any material that would comprise an agglomeration of particles.

Claims 8-10, 12-14, 16, and 43-50 were rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. Chen et al. is directed toward a catalyst material comprising a platinum group metal component dispersed on a support material. As stated above, the second material Markush group of claim 8 has been amended to delete platinum. Therefore, any overlap between claim 8 and the teachings of Chen et al. has been removed. Thus, claim 8 and all claims depending therefrom are allowable over Chen et al.

Independent claims 43 and 47 have been amended to recite that the particles of the composition or composite have an average crystallite size of less than about 15 nm. Also, the second material Markush group has been amended to recite Ag, Hg, Au, Sn, Ga, In, Pt, cations thereof and oxides thereof. Chen et al. do not teach particles having crystallite sizes of less than about 15 nm. In column 5, lines 44-46, Chen et al. teach that the catalytic material comprises particles in the “micron-sized range, e.g., 1 to 100 microns, or 5 to 50 microns, in diameter.” Clearly, Chen et al.

teach away from nano-sized particles such as those being claimed. Therefore, Applicants submit that claims 43, 47, and all claims depending therefrom are allowable over Chen et al.

Also, Blankenship et al. do not anticipate the materials of claims 43 and 47, particularly since they teach that the catalyst carrier is preferably from about 1 to about 8 millimeters in diameter. As noted above, claims 43 and 47 require that the particles have average crystallite sizes of less than about 15 nm.

Claims 17-19 and 20-23 were rejected under 35 U.S.C. 102(e) as being anticipated by Park. Park is directed toward a metal doped oxide catalyst. Preferred oxides support materials include alumina, zirconates, and titanates. Preferred dopants include indium, gallium, tin, and oxides thereof. Independent claim 17 has been amended to recite that the particles from which the composite is formed consist of a member selected from the group consisting of Ga_2O_3 , In_2O_3 , SnO , and $\text{Ga}_2\text{O}_3\text{-In}_2\text{O}_3$. Clearly, Park does not teach materials that consist of the recited metal oxides having the presently claimed properties. All of Park's materials must include a component other than those recited in claim 17. Therefore, Park does not anticipate claim 17 or any claim depending therefrom. Independent claims 20 has been canceled thereby rendering that rejection moot.

In view of the foregoing, a Notice of Allowance appears to be in order and such is courteously solicited.

A petition for a one-month extension of time for responding to the present office action is included herewith.

Any additional fee which is due in connection with this amendment should be applied against our Deposit Account No. 19-0522.

Respectfully submitted,

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